

# SEQUENCE LISTING

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<120> ACETYL AMINO ACID RACEMASE FROM AMYCOLATOPSIS ORIENTALIS FOR RACEMIZING  
CARBAMOYL AMINO ACIDS

<130> 214382US0X

<150> DE 10050124.9

<151> 2000-10-11

<160> 2

<170> PatentIn version 3.1

<210> 1

<211> 1107

<212> DNA

<213> Amycolatopsis orientalis

<220>

<221> CDS

<222> (1)..(1107)

<223>

<400> 1

gtg	aaa	ctc	agc	ggt	gtg	gaa	ctg	cgc	cgg	gtc	cgg	atg	ccg	ctc	gtg	48
Val	Lys	Leu	Ser	Gly	Val	Glu	Leu	Arg	Arg	Val	Arg	Met	Pro	Leu	Val	
1				5				10						15		

gcc	ccg	ttc	cgg	acg	tgc	ttc	ggg	acg	cag	tcc	gag	cgg	gaa	ttg	ctg	96
Ala	Pro	Phe	Arg	Thr	Ser	Phe	Gly	Thr	Gln	Ser	Glu	Arg	Glu	Leu	Leu	
			20					25					30			

ctg	gtc	cgc	gcg	gtg	acc	ccg	gcg	ggc	gag	ggc	tgg	ggc	gaa	tgt	gtc	144
Leu	Val	Arg	Ala	Val	Thr	Pro	Ala	Gly	Glu	Gly	Trp	Gly	Glu	Cys	Val	
		35					40					45				

gcg	atg	gag	gcg	ccg	ctc	tac	tgc	tgc	gag	tac	aac	gac	gcc	gcc	gag	192
Ala	Met	Glu	Ala	Pro	Leu	Tyr	Ser	Ser	Glu	Tyr	Asn	Asp	Ala	Ala	Glu	
	50					55					60					

cac	gtg	ctg	cgg	aac	cat	ctg	atc	ccc	gca	ctg	ctg	gcg	gcc	gag	gac	240
His	Val	Leu	Arg	Asn	His	Leu	Ile	Pro	Ala	Leu	Leu	Ala	Ala	Glu	Asp	
65					70				75					80		

gtg	acc	gcg	cac	aag	gtg	acg	ccg	ttg	ctg	gcg	aag	ttc	aag	ggc	cac	288
Val	Thr	Ala	His	Lys	Val	Thr	Pro	Leu	Leu	Ala	Lys	Phe	Lys	Gly	His	
				85				90						95		

cgg	atg	gcg	aag	ggc	gcg	ctg	gag	atg	gcg	gtc	ctc	gac	gcc	gaa	ctc	336
Arg	Met	Ala	Lys	Gly	Ala	Leu	Glu	Met	Ala	Val	Leu	Asp	Ala	Glu	Leu	

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100	105	110	
cgc gcg cat gac cgg tcc ttc gcg gcc gag ctg ggg tcc act cgc gac			384
Arg Ala His Asp Arg Ser Phe Ala Ala Glu Leu Gly Ser Thr Arg Asp			
115	120	125	
tcc gtg gcc tgc ggg gtc tcg gtc ggg atc atg gac tcg atc ccg cac			432
Ser Val Ala Cys Gly Val Ser Val Gly Ile Met Asp Ser Ile Pro His			
130	135	140	
ctg ctc gac gtc gtc ggc ggc tac ctc gac gag ggc tac gtc cgg atc			480
Leu Leu Asp Val Val Gly Gly Tyr Leu Asp Glu Gly Tyr Val Arg Ile			
145	150	155	160
aag ctg aag atc gag ccc ggc tgg gac gtc gag ccg gtc cgg cag gtg			528
Lys Leu Lys Ile Glu Pro Gly Trp Asp Val Glu Pro Val Arg Gln Val			
165	170	175	
cgt gag cgc ttc ggt gac gac gtg ctg ctg cag gtc gac gcg aac acc			576
Arg Glu Arg Phe Gly Asp Asp Val Leu Leu Gln Val Asp Ala Asn Thr			
180	185	190	
gcg tac acg ctg ggc gac gcg ccc ctg ctg tcc ccg ctc gac ccg ttc			624
Ala Tyr Thr Leu Gly Asp Ala Pro Leu Leu Ser Arg Leu Asp Pro Phe			
195	200	205	
gac ctg ctg ctg atc gag cag ccg ctc gaa gaa gag gac gtg ctc ggc			672
Asp Leu Leu Leu Ile Glu Gln Pro Leu Glu Glu Glu Asp Val Leu Gly			
210	215	220	
cac gcc gag ctg gcc aag cgg atc cgg acg ccg atc tgc ctc gac gag			720
His Ala Glu Leu Ala Lys Arg Ile Arg Thr Pro Ile Cys Leu Asp Glu			
225	230	235	240
tcg atc gtc tcg gcc aag gcc gcc gcg gac gcg atc aag ctc ggc gcc			768
Ser Ile Val Ser Ala Lys Ala Ala Ala Asp Ala Ile Lys Leu Gly Ala			
245	250	255	
tgc cag atc gtc aac atc aaa ccg ggc cgg gtc ggc gga tac ctc gaa			816
Cys Gln Ile Val Asn Ile Lys Pro Gly Arg Val Gly Gly Tyr Leu Glu			
260	265	270	
gcc cgc cgg gtg cac gac gtc tgc gcg gca cac ggg atc gcg gtg tgg			864
Ala Arg Arg Val His Asp Val Cys Ala Ala His Gly Ile Ala Val Trp			
275	280	285	
tgc ggc ggg atg atc gag acc ggg ctc ggc cgg gcg gcc aac gtc gca			912
Cys Gly Gly Met Ile Glu Thr Gly Leu Gly Arg Ala Ala Asn Val Ala			
290	295	300	
ctg gcc tcg ctg ccc ggc ttc acg ctg ccg ggg gac acc tcg gcg tcc			960
Leu Ala Ser Leu Pro Gly Phe Thr Leu Pro Gly Asp Thr Ser Ala Ser			
305	310	315	320
ggc cgg ttc tat cgc acc gac atc acc gag ccg ttc gtg ctg gac gcc			1008
Gly Arg Phe Tyr Arg Thr Asp Ile Thr Glu Pro Phe Val Leu Asp Ala			
325	330	335	



Lys Leu Lys Ile Glu Pro Gly Trp Asp Val Glu Pro Val Arg Gln Val  
165 170 175

Arg Glu Arg Phe Gly Asp Asp Val Leu Leu Gln Val Asp Ala Asn Thr  
180 185 190

Ala Tyr Thr Leu Gly Asp Ala Pro Leu Leu Ser Arg Leu Asp Pro Phe  
195 200 205

Asp Leu Leu Leu Ile Glu Gln Pro Leu Glu Glu Glu Asp Val Leu Gly  
210 215 220

His Ala Glu Leu Ala Lys Arg Ile Arg Thr Pro Ile Cys Leu Asp Glu  
225 230 235 240

Ser Ile Val Ser Ala Lys Ala Ala Ala Asp Ala Ile Lys Leu Gly Ala  
245 250 255

Cys Gln Ile Val Asn Ile Lys Pro Gly Arg Val Gly Gly Tyr Leu Glu  
260 265 270

Ala Arg Arg Val His Asp Val Cys Ala Ala His Gly Ile Ala Val Trp  
275 280 285

Cys Gly Gly Met Ile Glu Thr Gly Leu Gly Arg Ala Ala Asn Val Ala  
290 295 300

Leu Ala Ser Leu Pro Gly Phe Thr Leu Pro Gly Asp Thr Ser Ala Ser  
305 310 315 320

Gly Arg Phe Tyr Arg Thr Asp Ile Thr Glu Pro Phe Val Leu Asp Ala  
325 330 335

Gly His Leu Pro Val Pro Thr Gly Pro Gly Leu Gly Val Thr Pro Ile  
340 345 350

Pro Asp Leu Leu Asp Glu Val Thr Thr Glu Lys Ala Trp Ile Gly Ser  
355 360 365